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TELECOPIER MESSAGE

Dated: March 1, 2004

To: Lana Mai 703 308 3519

Re: Bienick 09/892,503

COMMENTS:

As requested, attached is FR 2 660 740.

Regards,
Sandy LeBrun-Evans,
Legal Assistant
Diller, Ramik & Wight

3/2/04 attached is Translation 3 pages

Diller, Ramik & Wight, P.C.

Attachments: 8 pages

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French patent: translation

Patent # 91 04111 from Bosh-Siemens Hausgerate.
Translated February 3, 2003

Refrigerator, more specifically kitchen refrigerator.

The invention involves a Refrigerator, more specifically a kitchen refrigerator made out of an outside insulated steel body inside of which, clear movable shelves are mounted with a height adjustment possibility between the brackets, which form protrusions on the side walls.

In this type of refrigerator, lately more and more shelving in clear plastic or glass are used in favor of wire-grid. The shelves in clear plastic are easily deformed and can break under a heavy load. Therefore, it is necessary, to reinforce them with a supporting frame. In order to use glass shelves, it is necessary to equip at least one glass edge with a shock absorber clip-on joint. The other free edges need to be carefully grinded down in order to eliminate all injury risk on a sharp edge. While in the first case, the added support frame, mostly made with steel wire, is responsible
for added cost, the required grinding of the glass edge is a costly step in the second case.

In this type of refrigerator, equipped with glass shelves, it is common practice to clip-on plastic profile on the front and back of the shelves. The side edges are equipped with guiding element (stud, nipple, leg...), which engages with the brackets on the sidewalls of the liner. Since these molded pieces easily detach from the glass, in this case it is also necessary to grind down all the edges of the glass (included the one covered by the clipped on molding) in order to avoid all risk of injury. This also adds a not desired cost to the production of the shelves.

The objective of the present invention is, in the type of refrigerator described in the introduction, to improve the quality of the shelves and so improve the user value of the refrigerator.

The problem is solved with the use of a glass plate surrounded by a closed plastic frame with side protrusions, which can engage in the liners' brackets.

The shelves made accordingly to the invention (glass plate surrounded by a closed plastic frame), can be produce simply and cost effectively. Furthermore, the glass plate surrounded by a closed plastic frame is safe and sturdy. Moreover, if the invented shelves are produced according to the preferred process, in which the closed plastic frame is molded on the glass, the handling of the shelves is especially easy and safe.

According to another beneficial production process, the plastic frame is equipped, in the front area of its side edges, with guiding legs, while in the back area; stud will form protrusions which engage between the liners' brackets.

It is also especially beneficial for the use of the selves that that the plastic frame creates a peripheral lip on the top surface of the glass.

This is a simple way to protect the sidewalls, and products located on the lower shelves from spill. Indeed, the accidental spill of liquid will stay on the shelf and not run over the edge.

In order to avoid pushing a stored product too far back and hit the liner, sometimes stick to it, it is planned that, according to an other improvement, the shelves be equipped at their rear end with a vertical stop.

The following will describe the invention in the case of kitchen fridge represented in a simplified version on the attached drawing. The fridge will have glass plates surrounded by a closed plastic frame as shelves.

Fig. 1 shows the kitchen fridge in perspective with the door open and equipped with shelves placed between the brackets, which form protrusions on the sidewalls. The shelves are made of glass plates surrounded by a closed plastic frame.

Fig. 2 shows a shelf in front view section II-II of fig.3 at a bigger scale than fig 1.

Fig. 3 shows the shelf in a top view.

Fig. 4 shows the shelf in a side view section IV-IV of fig. 3 in a greater scale than Fig. 2 & 3.

A refrigerator 10 is traditionally equipped with an outside-insulated steel body 11 which can be closed by a door 12. Inside of the steel body 11, shelves 14 for the storage of product are mounted between horizontal brackets 13 forming protrusions on the sidewalls. The shelves are movable and height adjustable between the brackets 13.

The shelves 14 are, as can be seen in fig 2, 3 & 4, made of glass plates 15 surrounded by a closed plastic frame 16. The plastic frame 16 has in the front area of its lateral sides 17 & 18 guiding legs 19 which can engage between the brackets 13. On the backside of the plastic frame 16, the rim 20 is equipped on both end of studs 21 which stick out on the lateral sides of the frame 17 & 18. These studs 21 can also engage between the brackets 13. The edges of the plastic frame 16 formed globally.of U-shaped profile form a slim lip 22 on the top surface of the glass plate 15, which retains spilled, liquid on the glass plate and avoid the liquid to leak out over the edge of the glass. The plastic frame 16 is also equipped on its back edge 20 with a vertical stop 23 which prevent the stored product to be pushed too far back and make contact with the liner 11.

As showed in fig 3 & 4, the guiding legs 19 on the lateral side 17 & 18 are cored out 24 and have ribs to allow for better physical strengths and material saving.

CLAIMS

1. Refrigerator, more specifically a kitchen refrigerator made out of an outside insulated steel body inside of which, clear movable shelves are mounted with a height adjustment possibility between the brackets, which form protrusions on the side walls characterized by the fact that the shelves 14 are made of a glass plate 15 surrounded by a closed plastic frame 16 which can be mounted by side legs 19 an studs21 between the brackets 18 of the steel frame 11.
2. Refrigerator in accordance to claim 1 characterized by the fact that the plastic frame 16 is molded on the glass plate 15.
3. Refrigerator in accordance to claim 1 or 2 characterized by the fact that the plastic frame 16 is equipped in the front area of its lateral edges 17 & 18 with guiding legs while studs 21 are place close to the rear edge 20 and engage between the brackets 13.
4. Refrigerator in accordance to claim 1 or 2 or 3 characterized by the fact that the plastic frame 16 forms a peripheral lip 22 on the top surface of the glass 15.
5. Refrigerator in accordance to claim 4 characterized by the fact that the rear edge 20 of the plastic frame 16 has a vertical stop 23 over the rim 22.